

“Knowledge Management” and Leadership in the Higher Education: A First Approach

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Abstract: *Today, it is more and more important to develop competences in the learning process of the university students (that is to say, to acquire knowledge but also skills, abilities, attitudes and values). This is because professional practice requires that the future graduates design and market products, defend the interests of their clients, be introduced in the Administration or, even, in the Politics. Universities must form professionals that become social and opinion leaders, consultants, advisory, entrepreneurs and, in short, people with capacity to solve problems. This paper offers a tool to evaluate the application for the professor of different styles of management in the process of the student's learning. Its main contribution consists on advancing toward the setting in practice of a model that overcomes the limitations of the traditional practices based on the masterful class, and that it has been applied in Portugal and Spain.*

Introduction

In addition to technical and conceptual skills in students, the new academic curriculum at the University should include the development of different human skills, specifically those related to leadership skills. In the learning process, various researchers argue that the influence of the teacher and its effectiveness in the classroom depends, both on its style as the situational context in which it operates. For this reason, what constitutes effective leadership in a particular situation may be ineffective in others. Thus, it is essential designing a method for describing the teacher's behaviour (that is, a code of conduct), and describing the relationship between different styles of leadership and performance in the learning process. This paper intends: 1) to build an active learning environment, in which students decide what and how to learn, and 2) to put into practice a didactic methodology based on active participation, motivation and interaction of students. There are various methods for describing the leadership style of the teachers. This paper is an incursion toward a model of good teaching practices, and is part of an international research, that was implanted at the postgraduate level at two universities, which for a long time apply didactic techniques based on competencies: the Institute of Visual Arts, Design and Marketing in Lisbon (Portugal) and Universidad Politecnica de Madrid (Spain). This research describes the process followed in this curricular design, vital to verify the effectiveness of this methodology and its intellectual dimension.

Literature review

Most of the studies on educational leadership suggest that there is not an ideal teacher, defined by certain characteristics of personality, or only by a way to act (there are very good teachers with personality traits and styles equally effective). Teaching models should focus on describing the manner in the teacher would be able to identify its style, recognize the responsibilities of their behaviour and describe the situations in which it makes sense a certain style of action.

Empirical research on this topic has been somewhat limited, mainly because of the lack of solid and tested models. Various studies seek to determine the leadership style of teaching, that is, transactional *versus* transformational style. However, scales on different styles of leadership are not universal, and have not practical utility. More research is required in postgraduate degree students.

Style of leadership

There are different theoretical approaches that have addressed the study of leadership in general, the most common being: the theories of the traits, characteristics and behavioral contingencies; and situational, transactional and transformational leadership (Bennetts, 2007; Pedraja et al., 2009). That is why some theoretical approaches and models do not share the same views and sometimes are contradictory (Elton, 2001; Lupano and Castro, 2008).

Many papers aim to find the style of leadership prevalent in teachers (Bass and Avolio, 2000; González and González, 2008), analyzing if the style is applied conforms to one transactional (professor exchanges qualifications and rewards for the effort of the students) or transformational style (teachers motivate, stimulate the students' analytical skills, and help them to achieve their objectives). Although a large part of the leadership literature highlights the importance of one of transformational nature (González and González, 2008; Muenjohn and Armstrong, 2008), various authors suggest that there is a need for greater knowledge of the type of leadership that is required in the current context, and they recommend refinement of the scales of leadership, developing simple procedures to facilitate decision-making in the classroom (Lowe et al., 1996; Mbawmbaw et al., 2006; Moss and Ritossa, 2007). This is because of the style of leadership is commonly measured in terms of multidimensional scales, such as that proposed by Bass and Avolio (1997). However, many researchers suggest various limitations of this type of scales: for example, that their factorial structure is not universal, some factors are further subdivided between itself, while others disappear. In addition, although many papers conclude that the transformational approach achieves a better performance of the professor, various studies refer to different styles of leadership, and they have no utility to act in an active way in the classroom. In this sense, this research seeks to shed some light on the relevance of a transformational leadership in the performance of the professor in the classroom.

Performance of the teacher

Various studies have proven that leadership has a significant impact on the performance in different business and areas. However, leadership in teaching process refers to the ability of the teacher to create a climate in the classroom that promotes learning, stimulating the satisfaction and the effectiveness of the students in their academic development (Antonakis et al., 2003). For this to happen, it is opportune to create in the classroom an experimental situation, in which the teacher tries to encourage the participation of students and their responsibility in the learning process (Caligiori and Diaz, 2006).

The importance of studying the climate generated in the classroom lies in the fact that a disinhibited environment reinforces orientation of students toward learning (González and González, 2008). However, various authors have shown that leadership does not influence on practices in companies for the students (Dochy et al., 1999; Joseph and Joseph, 1997; Pedraja et al., 2009). In general terms, the results obtained in various studies have shown that the same group can behave differently, depending on the teacher leadership that was exercised over them. In this context, it is very important defending participatory styles for reasons of motivation, satisfaction and effectiveness of learning process (Caligiore and Diaz, 2006). Although many studies on teaching methodologies are focused on identifying the aspects involved in the performance of students, increasingly there is a perceived need to integrate the leadership style of the professor with information about its performance; bear in mind the climate generated in the classroom, and generate performance protocols applicable in this area (Berggren et al., 2005). If we suppose that a participatory style of leadership reinforces learning of students, the performance of the teacher in the classroom provides information about what and how is this learning (AC Nielsen, 2000; Biggs and Tang, 2007). In Universities, it is very important to create a culture to learn in and through people, and for this there are two key milestones in the learning programme: the teamwork and the empowerment.

Research methodology

In this research we put into practice two modes of teaching, one of them to develop a participatory methodology in the classroom through work and panel presentations, for developing attitudes and skills of leadership. We tested different techniques on the participatory group: masterful class, debate, work and presentation in a group. In all cases, the students had to make their own decisions about the training content of the subject. Previously, professor investigated on expectations of the students. After the first items, developed by the teacher, students presented the topics by groups (two to three people). In the group of students on the one we applied non-participatory methods, methodologies were very traditional: professor established the objectives of the course, and he gave individual qualifications to students. To assess the results of these practices, we sent a questionnaire to the students, which included the following information: Part I: Leadership style of the teacher. Part II: Climate in the classroom. Part III: Degree of assimilation of the methodology. Part IV: Level of teaching performance. Part V: Identification data of the respondent. The variables in this research were collected in the

questionnaire with the scales and units of measure that are listed in the tables of results. For the preparation of the questionnaire we carried out a pretest with university professors and various external professionals, with knowledge and experience in this field. The field work in Portugal was held in the facilities of the University, between the June 28 and July 1, 2010. In Spain, information was obtained between the April 28 and June 1, 2011, and the sample included from undergraduate to postgraduate students. Table 1 provides details on this research.

Table 1: Methodological process of the research

PHASE	ANALYSIS	METHODOLOGY	TECHNIQUE
Previous	Documentary and validity of content analysis	Literature review Quantitative research (pretest)	Bibliographic review
Identification	Reliability and construct validity	Quantitative research (analysis of overall reliability and initial factorial validity)	Explanatory analysis of the data Cronbach's Alpha Item-total correlation factorial analysis
Evaluation	Assessment of the variables	Quantitative research	Descriptive analysis of the data

Analysis of results

Table 2 shows, in comparative terms, the profile of the students who answered this questionnaire. As a whole, in this analysis it is worth noting the greater male presence among the students (54.8%), as well as the high proportion of students who work in private companies (83.5%).

Table 2: Sample (data in percentage, means and typical deviation).

SAMPLE	STUDENTS		TOTAL
	SPAIN	PORTUGAL	
AGE: ▪ Mean ▪ T. D.	21,1 years old 2,47	25,1 years old 9,5	23,1 years old 5,99
GENDER: ▪ Male ▪ Female	74,6 % 25,4 %	46 % 54 %	54,8 % 45,2 %
DOES HE/SHE WORK AT THE MOMENT? ▪ Yes ▪ No	14,3 % 85,7 %	45 % 55 %	68,7 % 31,3 %
ORGANIZATION TYPE: ▪ Public ▪ Private	12,5 % 87,5 %	14 % 86 %	16,5 % 83,5 %
POSITION IN THE ORGANIZATION: ▪ High ▪ Intermediate position ▪ Without main position	12,7 % 55 % 32,3 %	27 % 8 % 65 %	14,8 % 40,4 % 44,8 %
EXPERIENCE IN THE CURRENT POSITION: ▪ < 1 year ▪ 1 to 3 years ▪ > 3 years	33,3 % 44,4 % 22,2 %	25 % 36 % 39 %	15,3 % 43,5 % 41,2 %
TOTAL STUDENTS	63	58	121

Table 2 shows that Spaniard students have something more experience in the current position than Portuguese people, in Spain students occupy intermediate positions in their organization, so they are studying in order to promote themselves professionally. However, in Portugal students accumulate less experience than Spaniard students.

Measurement of the variables

This research started with the selection of variables representative of the areas identified as a frame of reference. The questionnaire was applied in Portugal on the total of the students, in order to avoid biases in the empirical structure, to validate the stability of the solutions obtained in each step and generalize the results beyond the sample obtained. This cross-validation allowed us to analyze data with two samples: one of them (in Spain) for the estimation, diagnosis and modification of the previous instrument of measurement; and the other (in Portugal) to cross-validate this analysis.

Evaluation of the variables

Table 3 presents the responses of the students at the scale of the leadership style of the professor. At this point it is interesting to note the high valuations averages of the participative style applied; in line with what is observed in other studies for this type of methodology (Pedraja et al., 2009). The detailed analysis of the table reveals high marks in the items: the professor "tolerates differences of opinion" (averages of 3.54 and 4.27), "different points of view" (3.79 on average in Portugal and 4.37 in Spain) and "generate new ideas in the classroom" (with values above 3.62 and 4.14, on a scale of importance of 1 -at least- 5 -maximum-). On the other hand, the items of motivation are the most valued by the students (the "enthusiasm of the teacher in the classroom" and "confidence in the accomplishment of the objectives", with average values of 4.26 and 4.64). The remaining indicators linked to the motivation of the professor, also they have averages exceeding 3 but with deviations more significant. In addition, the detailed analysis of the two groups of students reveals the fact that "the professor has a tendency to speak enthusiastically about the targets to be achieved".

Finally, empathy is a very appreciated by the students, because it reflects provision of the teacher with the student "in response to their feelings and needs" (2.97 average in Portugal, and 4.19 in Spain), and "... time to teach and guide" (4.13 and 4.57 averages). Something that was appreciated is also that "professor relates in a personal way with the student" (2.92 and 4.13 means), and "he treated me individually" (3.59 and 4.08).

Table 3. Items of style of leadership scale (data in percentage, means and typical deviation).

(1 = very in disagreement, to 5 = very in agreement)		STUDENTS				TOTAL	
		Bachelor Portugal		Bachelor Spain			
		Mean	T. D.	Mean	T. D.	Mean	T. D.
▪	New forms of making some tasks	3,08	0,66	4,02	0,71	3,57	0,69
▪	Different points of view	3,79	0,62	4,37	0,55	4,09	0,58
▪	New ideas to solve problems	3,62	0,67	4,14	0,74	3,89	0,71
▪	Tolerate differences in opinions	3,54	0,64	4,27	0,68	3,92	0,66
▪	Enthusiasm about the goals	4,26	0,64	4,64	0,68	4,46	0,66
▪	The professor always helps me...	3,51	0,60	4,43	0,61	3,99	0,61
▪	Praises when one makes a good work	3,64	0,84	4,84	0,52	4,26	0,67
▪	Trust in that goals will be reached	3,59	1,19	4,51	0,59	4,07	0,88
▪	Moral and ethical consequences of decisions	3,79	1,22	4,08	0,77	3,94	0,99
▪	Attention to students' feelings and needs	2,97	0,67	4,19	0,74	3,60	0,71
▪	The professor is related personally with me	2,92	0,96	4,13	0,79	3,55	0,87
▪	The professor treats me as individual	3,59	0,68	4,08	0,90	3,84	0,79
▪	Time to guide and teach	4,13	0,62	4,57	0,59	4,36	0,60

Table 4 presents the results of the evaluation of the performance of the teacher in the classroom. It is also noted that the empirical results in both cases are high for almost all

indicators collected in this research. In the first items, the views are consistent with the fact that the performance of teachers get "to improve the climate in the classroom with good humor" (3.69 and 4.81 on average) and that "the teacher uses teaching methods which I find satisfactory" (3.56 and 4.19). This analysis is in line with the results of previous studies, which emphasize the effectiveness of teaching methods in which students are co-producers of their own learning (Caligiore and Diaz, 2006, Moss and Ritossa, 2007).

With regard to the second group of questions, the items are related to aspects of extra effort on students, the values obtained have been more modest (averages between 3.28 and 4.18 in Portugal) than in the first set of data. In general, the students were satisfied with the way how they perceive the methodology, and its reflection in the results; but there are still some values of discordance and more significant in various items. Despite a significant number of neutral responses in the first 4 items, in a general way the students are in accordance with the performance of the teacher: "he implements ways to motivate and satisfy the needs of the group", "tasks to achieve the learning objectives", and the teacher is "ready to help them", so that, in general terms, the students feel happy with the teacher and the objectives of the course.

Table 4. Professor performance indicators (data in percentage, means and typical deviation).

(1 = very in disagreement, to 5 = very in agreement)	STUDENTS				TOTAL	
	<i>Bachelor Portugal</i>		<i>Bachelor Spain</i>			
	Mean	T. D.	Mean	T. D.	Mean	T. D.
▪ Satisfactory didactic methods	3,56	0,68	4,19	0,76	3,89	0,72
▪ Good humor in the classroom	3,69	0,69	4,81	0,50	4,27	0,59
▪ Satisfaction with the goals...	3,51	0,82	4,44	0,58	3,99	0,70
▪ The professor expresses satisfaction...	3,46	0,68	4,59	0,56	4,05	0,62
▪ "In general, I am satisfied with this style..."	3,62	0,82	4,64	0,58	4,15	0,70
▪ Motivate to work harder	3,28	1,26	4,13	0,66	3,72	0,95
▪ Motivate to make more than...	3,26	1,25	4,02	0,79	3,66	1,01
▪ Pride for the right work	3,51	1,09	4,39	0,75	3,97	0,91
▪ Rewards when reaching the goals	3,44	1,14	3,99	0,77	3,73	0,95
▪ Motivation to be successful	3,28	1,23	4,24	0,78	3,78	1,00
▪ Effective in motivating the group	3,51	1,12	4,18	0,68	3,86	0,89
▪ Effective in satisfying the needs...	3,56	1,09	4,33	0,70	3,96	0,89
▪ Effective in assigning tasks to achieve objectives	3,85	1,01	4,13	0,68	4,00	0,84
▪ The professor is willing to help...	4,18	0,94	4,70	0,50	4,45	0,71
▪ In general, I'm satisfied with the objectives...	3,57	1,11	4,48	0,56	4,04	0,82

In summary, it can be said that the students have a positive opinion on the issues in this research. It is very important to emphasize particularly the views of concordance, in the items "professor helps to analyze the problems according to different points of view", he "has a tendency to speak enthusiastically about the challenges to achieve", and "he treats each individual in a personal way". Thus, we conclude that results are in line with the development of attitudes, values and social skills, such as the new requirements of a dynamic labour market (AC Nielsen, 2000; UNESCO, 1998). The detailed analysis by groups of students reaffirms the findings summarized above. The high scores in undergraduate students relate to a large extent with the application of this technique in a smaller group of students, in classes converted into seminars and with its own methodology of cooperative learning.

Conclusions

The main contribution of this paper is to present some teaching techniques based on participatory styles of management in the classroom. In addition, this research presents an original scale of measurement of the leadership style of the teacher, and also the evaluation of their performance. Its purpose is that this instrument will be used as a tool for the academic improvement, and its justification is found in the growing interest in Europe for the quality in the Higher Education.

This research presents an exploratory scale ad hoc of the leadership style in teaching, which is very simple and operational, and it can be adapted by each teacher on the basis of teaching techniques implemented in their subject. Its virtue lies not only in the scope of this research, which has been carried out in two countries, and it has been discussed in students with academic and professional circumstances very similar; and too in contexts of participatory. In addition, these scales in this paper enable us to integrate the style applied by the teacher in the classroom with performance indicators, by modifying these in accordance with the levels and preferences of the students with each educational technique developed. This procedure is directly applicable in the classroom, and can also be taken in different countries. The knowledge of these practices is an essential tool for planning the academic curriculum of the students; and is of interest for directors of the educational institutions, as well as for academic managers and teachers, in order to analyze their own educational outcomes.

In this research we have evaluated the characteristics of the scales for measuring two concepts, both the leadership style of the professor, and the teaching performance. The implementation of this research in Portugal (for the identification of the model) and in Spain (for its subsequent validation) confirms the validity of the conceptual proposal presented in these pages. The innovative nature of this instrument lies to ask directly to students; unlike other approaches focusing on the evaluations of the teachers. Finally, although this tool has been applied exclusively in Information Technologies courses, does not exclude their extension to different levels of the educational system, as well as in other different areas of knowledge. In future research also will be of particular interest to the interaction of the leadership style of the professor with aspects such as the characteristics of the group that he guides.

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